

Work Order ID 56719

March 5, 2010 9:59:52 AM



Page 1

Item ID: D412-742-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Float Skidtube

Stop



Start Date: 05/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 17/03/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

PL

Date:

10-3-5

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3391

Rev H

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

If D412-742-041 is a W/O on it's own,
Photocopy bluefile and create labels per PPP D412-742-041 CHG004

N/A *PL*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Page 2

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Required Date: 17/03/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

110

0.00



HandFinishing

HandFinish

Memo

0.00

=> M 10/08/18

1

0

Hand Finishing

1-Install tubes together and seal them all the way around using Sikaflex 241/291. Ensure tube ends line-up with saddle holes for proper alignment. using

7/16" "T" Pins.

A/R ☐ Sikaflex-241/-291 ☐ M115114

Expiry date: ☐ 11/01

2-Install wearplates as per Dwg D3391. Ensure that plastic washers are against wearplate, then topped with the SS washer. Seal all bolts with sikaflex except ones with inserts on inside of tube, hand tighten only bolts with no sikaflex.

A/R ☐ Sikaflex-241/-291 ☐ M116114

Expiry date: ☐ 11/01

3-Remove "T" pins once sikaflex is dry.

4-Coat all exposed hardware with LPS Procyon. Remove any excess off with MEK degreaser.

A/R ☐ LPS Procyon ☐ M114596

120

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

M

18

08

18

①

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Page 3

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 Packaging	Packaging	0.00							
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D412-742-041 <input type="checkbox"/> Location: _____ <input type="checkbox"/> PPP Rev: _____								
			PPP 6308						
140 QC	QC21- Final Inspection - Work Order Release	0.00							
Quality Control	Memo	0.00							

10/21/19

10/08/23

MF 10-820

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

March 5, 2010 9:59:49 AM

Page 16
9

Work Order ID: 56719



Parent Item: D412-742-041



Parent Item Name: Replacement Float Skidtube

Start Date: 05/03/2010

Required Date: 17/03/2010

Comments: IPP Rev A 05.10.13 New Issue
IPP Rev B 06.02.13 ECN 773 dwg @ rev.D
IPP Rev: C 07-05-28 As per Rev F
IPP rev D 07.11.01 ecn 1053p

KJ/JLM
EC
JLM
EC

Start Qty: 1.00

Required Qty: 1.00

AN3C4A Purchased No 110 Each 1,649.000 24.0000
BOLT



Warehouse Loc Qty Loc Code

Location

Main Warehouse

Location	Qty
ST	1649
112314	13
112720	12
112724	3
112829	1
112991	2
113121	64
113226	344
113644	110
113749	100
114103	500
114108	500

1114941

x24 11 10108117

AN3C6A Purchased No 110 Each 718.0000 12.0000
BOLT



Warehouse Loc Qty Loc Code

Location

Main Warehouse

Location	Qty
ST	718
111982	718

x12 11 10108117

March 5, 2010 9:59:49 AM

Shop Packet Print

Page 36

W/O:		WORK ORDER CHANGES					
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March 5, 2010 9:59:49 AM

Page 37

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IPP Rev: C 07-05-28 As per Rev F
IPP rev D 07.11.01 ecn 1053p

KJ/JLM
EC
JLM
EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

AN3C7A Purchased No

110

Each

485.0000

8.0000



BOLT



Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

485

105906

21

107376

252

113149

212

AN960C10L Purchased No

110

Each

388.0000

44.0000



washer



Warehouse

Loc Qty

Loc Code

Location

OFFSHORE

FG

100

103585

100

Main Warehouse

ST

288

112116

128

112612

160

*NAS1149C0332 R

y8 24 10/08/17

M 115000

x44 24 10/08/17

March 5, 2010 9:59:49 AM

Shop Packet Print

Page 37

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March 5, 2010 9:59:49 AM

Page 38

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IPP Rev C 07-05-28 As per Rev F
IPP rev D 07.11.01 ecn 1053p

KJ/JLM
EC
JLM
EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

AN960C416L

Purchased No

110

Each

1,314.000 4.0000



WASHER

Warehouse
Location

Loc Qty

Loc Code

OFFSHORE

FG

44

104925

44

Main Warehouse

ST

1270

111916

2

112612

368

112794

500

112828

400

D3391-011

Manufactured No

110

Each

0.0000

1.0000



Fwd Tube Assembly

D3391-013

Manufactured No

110

Each

0.0000

1.0000



Mid Tube Assembly

D3391-015

Manufactured No

110

Each

0.0000

1.0000



Aft Tube Assembly

used on p3391-013
56728

x1 10/08/17

x1 B56725 10/08/17

x1 B56728 10/08/17

x1 B56733 10/08/17

March 5, 2010 9:59:49 AM

Shop Packet Print

Page 38

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March 5, 2010 9:59:49 AM

Page 27

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IPP rev D 07.11.01 ecn 1053p

KJ/JLM
EC
JLM
EC

Start Qty: 1.00

Required Qty: 1.00

D3564-1

Manufactured No

110

Each

18.0000

1.0000



Wearshoe

Warehouse

Loc Qty

Loc Code

Location

OFFSHORE

FG

2

33798

2

Main Warehouse

ST

16

47531

1

50270

1

51676

14

Y1 3d 10/08/17

March 5, 2010 9:59:49 AM

Shop Packet Print

Page 39

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March 5, 2010 9:59:49 AM

Page 40

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 IPP Rev: C 07-05-28 As per Rev F
 IPP rev D 07.11.01 ecn 1053p

KJ/JLM
 EC
 JLM
 EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

D3564-3 Manufactured No

110

Each

19.0000

1.0000



Wearshoe

Warehouse
Location

Loc Qty

Loc Code

OFFSHORE

FG

2

33764

2

Main Warehouse

FP

5

50113

5

Main Warehouse

FP19

11

55489

11

Main Warehouse

ST

1

46445

1

VI 10/08/17

March 5, 2010 9:59:49 AM

Shop Packet Print

Page 40

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March 5, 2010 9:59:49 AM

Page 41

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IPP rev D 07.11.01 ecn 1053p

KJ/JLM
EC
JLM
EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

D3564-5

Manufactured No

110

Each

36.0000

1.0000



Wearshoe

Warehouse
Location

Loc Qty

Loc Code

OFFSHORE

FG

2

34806

2

Main Warehouse

FP19

32

51925

1

54772

6

55024

12

55333

13

Main Warehouse

ST

2

45824

1

47433

1

B59157

x1 24 10/08/17

March 5, 2010 9:59:49 AM

Shop Packet Print

Page 41

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March 5, 2010 9:59:49 AM

Page 42

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KJ/JLM
EC
JLM
EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

D3566-1

Manufactured No

110

Each

23.0000

2.0000



Gasket

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

FP

18

52512

3

54480

1

55011

1

55320

13

Main Warehouse

ST

5

46349

1

51218

1

51259

3

1360857

x8

10/08/17

March 5, 2010 9:59:49 AM

Shop Packet Print

Page 42

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Page 43

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IPP rev D 07.11.01 ecn 1053p

KJ/JLM
EC
JLM
EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

D3566-5 Manufactured No 110 Each 26.0000 1.0000



Gasket



Warehouse Loc Qty Loc Code
Location

Main Warehouse

FP19 22

55026 10

55335 12

B59158

x1 21 10/08/17

Main Warehouse

ST 4

36113 1

46186 1

47318 1

51260 1

D3591-1 Manufactured No 110 Each 37.0000 2.0000



Bushing



Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST 37

46105 29

47121 8

B57350

x2 21 10/08/17

March 5, 2010 9:59:49 AM

Shop Packet Print

Page 43

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IPP rev D 07.11.01 ecn 1053p

KJ/JLM
EC
JLM
EC

Start Qty: 1.00

Required Qty: 1.00

D3672-3 Manufactured No

110 Each 524.0000 4.0000



Phenolic Washer

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST117

24

51596

24

B5770A

x4 MU 10/08/17

Main Warehouse

ST77

500

55560

500

MS27039C4-12

Purchased No

110 Each 22.0000 4.0000



SCREW

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

22

12726

4

2296

2

5558

16

M 114221

x4 MU 10/08/17

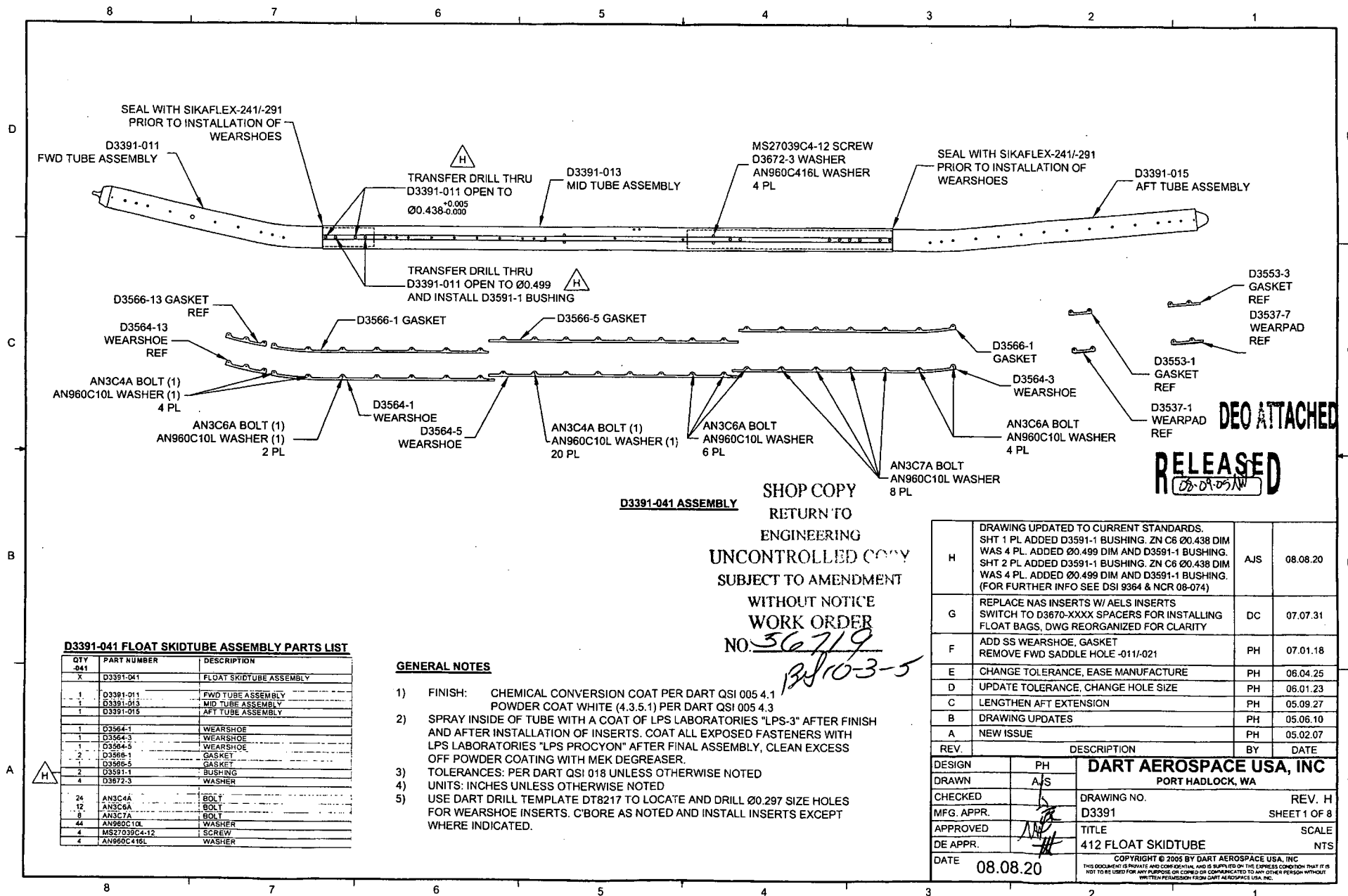
W/O:		WORK ORDER CHANGES					
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D3391-041 ASSEMBLY

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 56719
B710-3-5

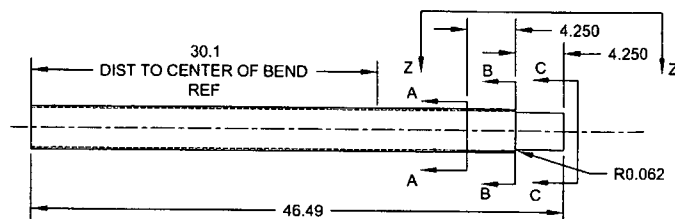
D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
2	D3566-5	GASKET
2	D3591-1	BUSHING
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
3	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

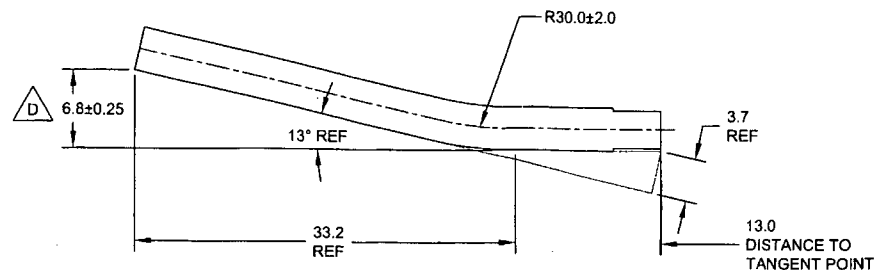
GENERAL NOTES

- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

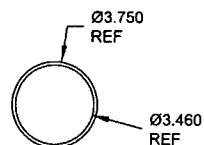
REV.	DESCRIPTION	BY	DATE
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA DRAWING NO. D3391 REV. H SHEET 1 OF 8 TITLE 412 FLOAT SKIDTUBE SCALE NTS COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMERCE OR COMMERCIALIZED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	
DRAWN	AJS		
CHECKED			
MFG. APPR.			
DE APPR.			
DATE	08.08.20		



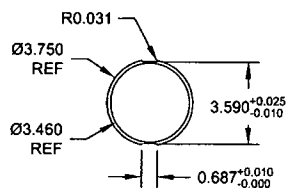
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



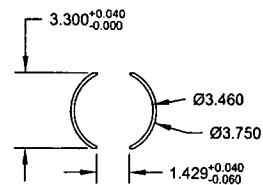
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



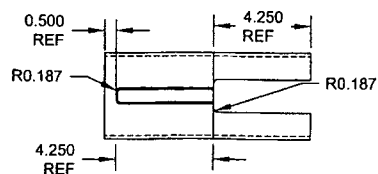
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



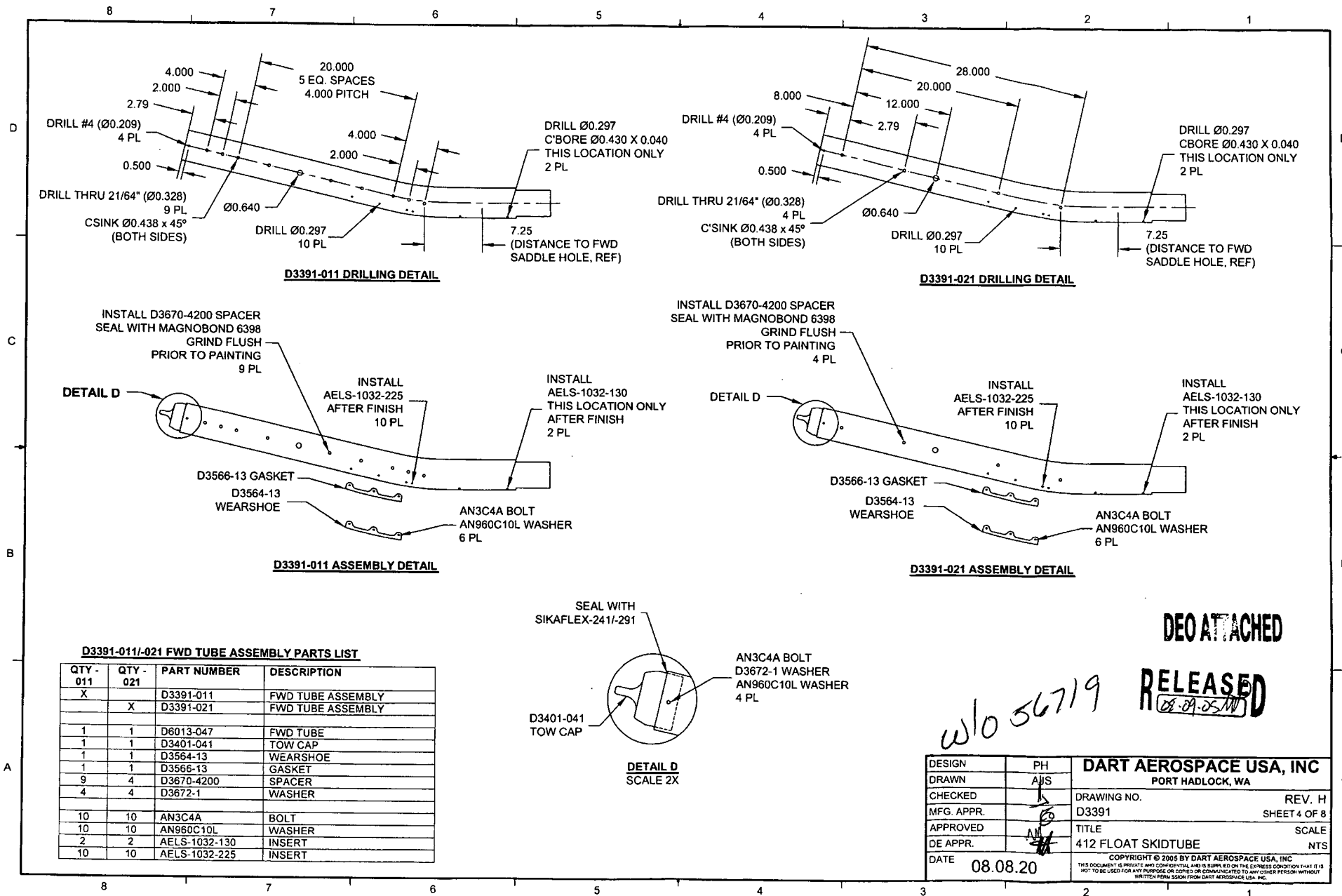
SECTION C-C
SCALE 2X

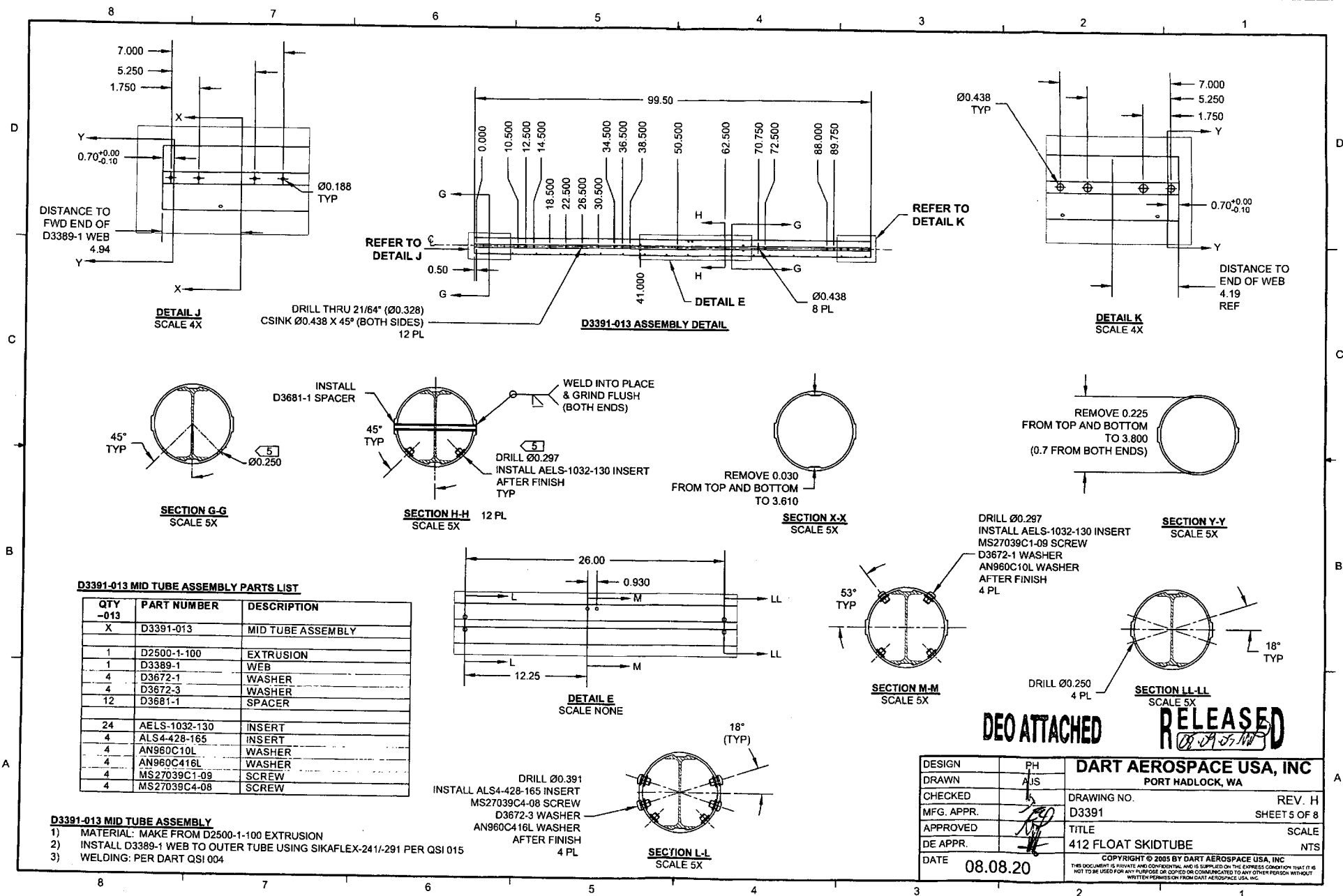


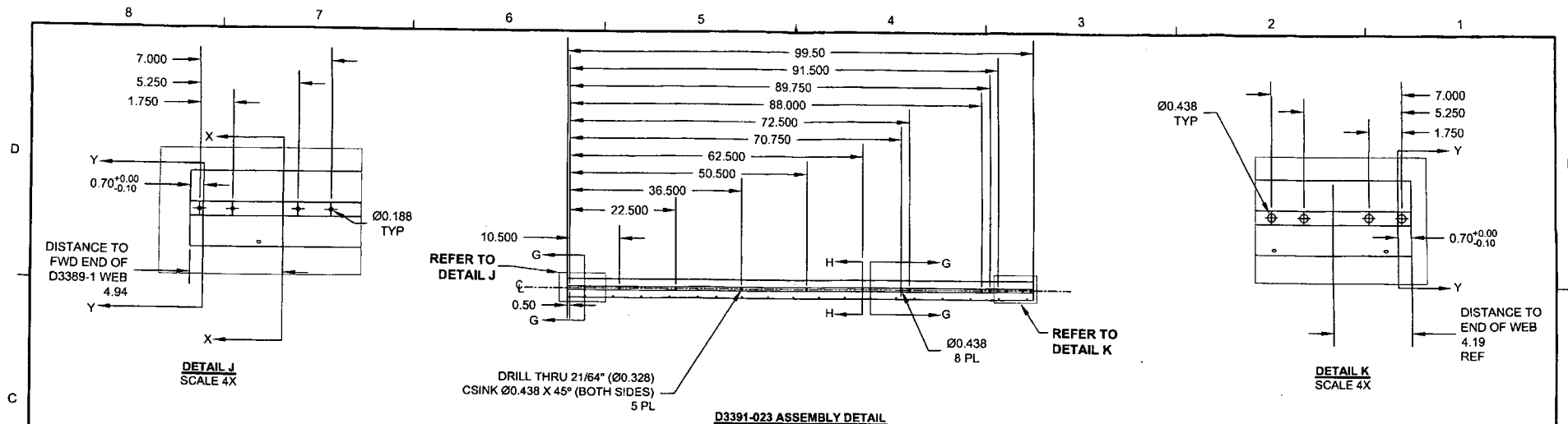
VIEW Z-Z
SCALE 2X

DEO ATTACHED
RELEASED
08-05-11

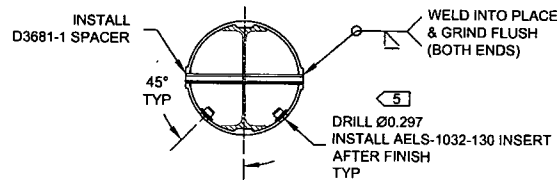
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO. D3391	REV. H
MFG. APPR.		SHEET 3 OF 8	
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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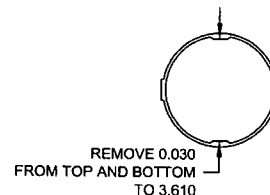




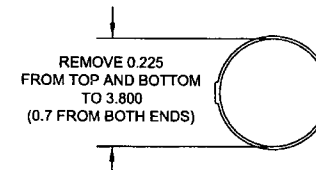
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

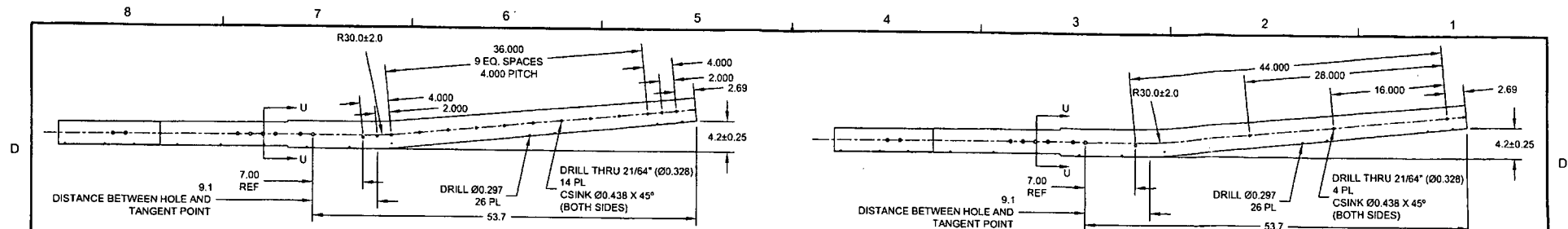
D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004

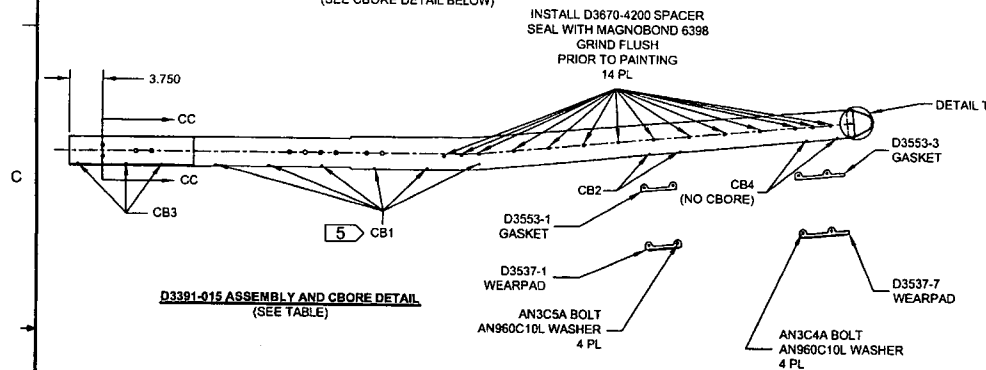
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 6 OF 8
APPROVED		TITLE	SCALE
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RELEASED
08-09-03-14

01056719



D3391-015 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



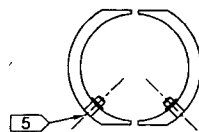
D3391-015 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

D3391-015/025 AFT TUBE ASSEMBLY PARTS LIST

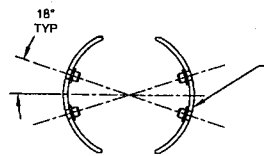
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X	X	D3391-015	AFT TUBE ASSEMBLY
		D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4	4	ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER

CBORE HOLES MARKED CB1-CB4 AS FOLLOWS AND
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	$\phi 0.430 \times 0.170$	AELS-1032-225
CB2	4	4	$\phi 0.430 \times 0.170$	AELS-1032-130
CB3	6	6	$\phi 0.430 \times 0.040$	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

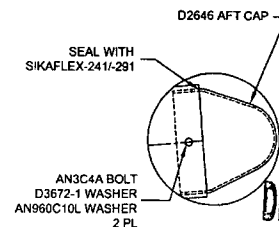


SECTION U-U
SCALE 3X



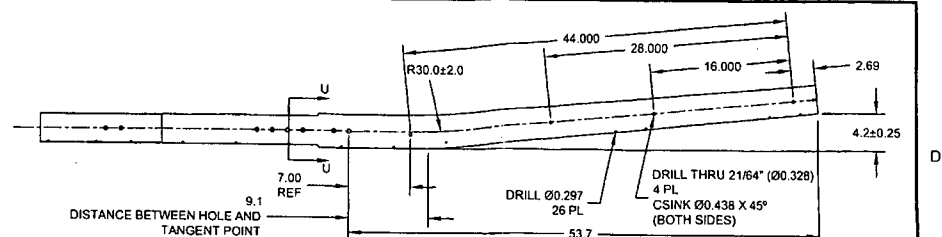
SECTION CC-CC
SCALE 3X

DRILL $\phi 0.391$
CBORE $\phi 0.516 \times 0.040$ DEEP
INSTALL ALS4-428-165 INSERT
4 PL

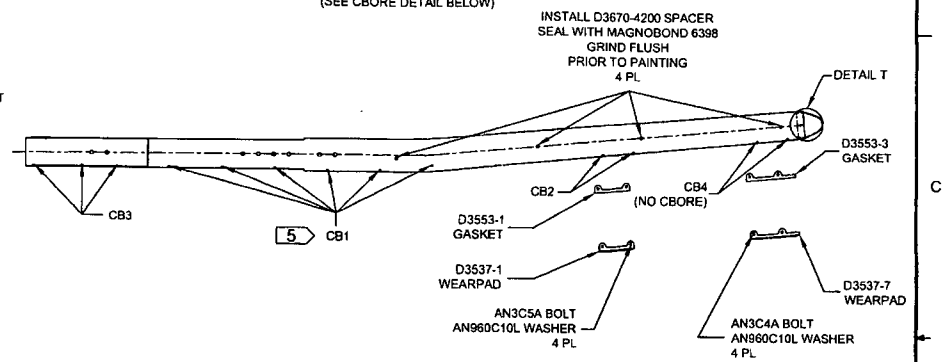


DETAIL T
SCALE 4X

D3391-025 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)



D3391-025 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



D3391-025 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

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MFG. APPR.		D3391	SHEET 8 OF 8
APPROVED		TITLE	SCALE
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RELEASED
08-09-05

DEO ATTACHED

DRAWING NO. D3391	TITLE 412 FLOAT SKIDTUBE	REV. H	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3391-H-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>h</i>	MFG. APPR. <i>AA</i>	APPROVED <i>MP</i>		DE APPR. <i>MP</i>		
DATE 09.09.23	DATE <i>04.09.24</i>	DATE <i>09/09/25</i>	DATE <i>09/09/30</i>		DATE <i>09/09/30</i>		

PURPOSE:

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

CHANGE:

AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH~~
~~AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH~~
 LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS
 OFF POWDER COATING WITH MEK DEGREASER.

RELEASED
 2010-02-02

MP

w/o 56719

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